A Pragma-Semantic Account for Negative Island Obviation by *Wa* in Japanese

Hitomi Hirayama

Keio University

Kanagawa, Japan

`hhirayam@keio.jp`

Abstract

This paper provides a pragma-semantic account for negative island obviation by *wa* in Japanese. I propose that negative island obviation by *wa* is achieved by special discourse effects carried by this particle. In particular, the particle *wa* loosens the requirement of questions that there should be a maximally informative answer. The proposal does not rely on dense scales and suggests that discourse effects of a particle could play a significant role in the interface between semantics and pragmatics.

1 Introduction

Negative islands and obviation effects have revealed how informativeness is encoded in languages and how we calculate the measurement (Abrusán and Spector 2011; Abrusán 2014; Fox and Hackl 2006). In Japanese, a particle *wa* makes obviation possible, as reported by Schwarz and Shimoyama (2010) and shown in (1).

(1) Taro-wa   doredake nagaku-*(wa) doitu-ni   taizaisi nak-atta   no?
     Taro-TOP how   long-*wa*   Germany-in stay   NEG-PAST Q

     'How long-*(wa) did Taro not stay in Germany?'

This paper gives a pragma-semantic analysis of negative island obviation by *wa* in Japanese, combining the interval semantics by Abrusán and Spector (2011) and special discourse effects of the particle *wa*. It is revealed that special discourse effects associated with certain marked questions play important roles at the interface of semantics and pragmatics. Furthermore, unlike Schwarz and Shimoyama's (2010) analysis, it is not necessary to assume dense scales.

The rest of paper is organized as follows. Section 2 provides background on negative island obviation focusing on how the interval semantics can derive obviation in an intricate context. Section 3 illustrates the problems on negative degree questions in Japanese. The pragma-semantic analysis is provided in Section 4. In Section 5, I demonstrate how the proposed analysis works and compare it with the analysis in the literature. Section 6 concludes the paper and consider theoretical implications of the analysis.

2 Background

Degree questions with negation are infelicitous with the amount reading (Heycock 1995). For example, (2) is interpretable as a question that asks the cardinality of the (contextually available) set of books John did not buy. This cannot be interpreted as a question that asks for n such that John did not buy n books.

(2)   How many books did John not buy?

Syntactic (Rizzi 1990), pragmatic (Kroch 1989), and semantic analyses have been made to explain why this is the case. In semantic analyses, there also have been discussions whether this phenomenon tells anything about the scale we use in computing the meaning (Fox and Hackl 2006).

Among different semantic approaches, I adopt the analysis by Abrusán and Spector (2011) as the baseline of my analysis. In this analysis, degrees are treated as intervals. Combining the interval semantics and maximal informativity principle (MIP), shown in (4), their analysis correctly predicts that questions such as (3) are infelicitous in an out-of-the-blue context but can be rescued under a certain context.

(3)   How many rabbits does none of these women have?
      # Context 1: There are nine women. Five women have five rabbits.
                  Four women have nine.
        ▷ Possible intervals that can be true answers: $[1, 4]$, $[6, 9[$, $[7, 7]$, $[10, +\infty[$
      ✓ Context 2: There are nine women.
                  For all $0 < n < 10$, one woman has exactly n rabbits.
        ▷ Possible intervals that can be true answers: $[10, 16]$, $[12, 12]$, $[10, +\infty[$

(4)   Maximal Informativity Principle (MIP): A question is supposed to have a maximally informative answer, which is a true answer that entails all the other possible answers.

When there is no special context, (3) is judged infelicitous because there cannot be an interval that contains all the other intervals that would give rise to a true answer. As an example of a context that is not special and close to an out-of-the-blue context, let us imagine Context 1. In this context, there cannot be an interval that includes all true answers. For instance, $[10, +\infty[$ does not include $[7, 7]$, which can also be a possible true answer.

By contrast, when an intricate context such as Context 2 is available, (3) is felicitous. What is special about Context 2 is that for every number n such that $0 < n < 10$, there is one woman such that she has exactly n rabbit. Such a situation is not readily available in a normal context. Nevertheless, as long as such a context is available, (3) can get the answer 10. This is possible because we can get an interval $[10, +\infty[$, which contains all the other intervals that would give rise to a true answer.

Note that the process of deriving the (in)felicity of the questions does not rely on dense scales. The scale is assumed to be discrete in the example above because the number of entities is under discussion. Even with discrete scales, the interval semantics provides us with the same results and predictions.

3   Problem

In principle, the semantic account outlined above would predict that similar effects would be observed in other languages. However, Japanese shows a different picture; even under Context 2, which can ameliorate the English question, the Japanese counterparts (5a-b) are infelicitous.[1] The questions sound equally odd across contexts. One way to make obviation possible is by adding *wa* to the *wh*-phrase, as observed in Schwarz and Shimoyama (2010). A notable feature of these questions is that they do not require complicated context. The possible answer refers to a number that exceeds the maximum number of rabbits owned by at least one woman. In other words, in both Context 1 and 2, the answer would be 10. Furthermore, the answer to this question also has to be marked with *wa*, as shown in (6).

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[1]I appreciate an anonymous reviewer suggesting more appropriate Japanese counterparts of English sentences. The original version used *dono hito-mo*, which could be parsed differently from what is intended here.

(5)   "How many rabbits does nobody have?"[2]

     a.   Dare-mo   usagi-o   nan-biki-#(wa) kattei-nai no?
        every person rabbit-ACC what-CL-WA   have-NEG Q

     b.   Dare-mo   nan-biki-#(wa) usagi-o   kattei-nai no?
        every person what-CL-WA   rabbit-ACC have-NEG Q

(6)   Zip-piki-#(wa) kattei-nai.
      ten-CL-WA   have-NEG

     '(Every person) does not have 10-*wa* (rabbits).'

In Schwarz and Shimoyama (2010), negative island obviation by *wa* is explained by assigning *at least* semantics to *wa* while giving *exactly* semantics to numerals. Without *wa*, it is not possible to get the maximally informative answer because the possible answers are neither downward nor upward scalar due to the *exactly* semantics. By contrast, adding *wa* makes the possible answers aligned by semantic strength, and consequently, there is a maximally informative answer available. However, if changing the *exactly* semantics is the key, not only adding *wa* but also adding a lexical item meaning *at least* (*sukunakutomo* or *izyoo* in Japanese) to the numeral should be able to rescue sentences with negative islands. However, this is not borne out, as shown by (7).

(7)   Adding *at least* cannot rescue negative island questions

     a.   # Dare-mo   usagi-o   sukunakutomo nan-biki kattei-nai no?
        every person rabbit-ACC at least   what-CL have-NEG Q

     b.   # Dare-mo   usagi-o   nan-biki-izyoo   kattei-nai no?
        every person rabbit-ACC what-CL-more than have-NEG Q

The above examples show that aligning alternatives cannot make obviation possible. In other words, using this particular particle, *wa* is necessary for obviation. As a result, it is necessary to say that something special about *wa* is the key.

4   Proposal

I argue that the presupposition of *wa* plays an important role in the obviation effect. In particular, I analyze *wa*-questions as a marked question with special discourse effects. The interaction between the presupposition of questions — namely, the Maximal Informativity Principle (MIP)

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[2]The two Japanese examples both use floating quantifiers, and there is a reason behind this. There are at least four ways to express numeral+noun such as *how many rabbits* in Japanese (Watanabe 2006). Out of the four, two are ambiguous with respect to specificity. The other two are unambiguously non-specific, and the examples used in (5) are categorized into this type. It needs further investigation whether this specificity correlates with referentiality, but the amount reading under discussion here should go along with non-specific noun phrases. The point is the intricate context cannot rescue the negative island obviation regardless.

Furthermore, as an anonymous reviewer pointed out, it is possible to place numerals prenominally, as shown in (i). This noun phrase (or DP) is ambiguous between specific and non-specific, so in principle, it is predicted to behave in the same way as (5). With an accusative marker -*o*, the question is infelicitous even under Context 2. However, to my ears, a version with *wa* does not sound as good as (5a-b) do.

(i)   Dare-mo   nan-biki-no   usagi-#o/??wa kattei-nai no?
      every person what-CL-GEN rabbit-ACC/WA have-NEG Q

At this point, I do not know why this is the case. *Wa* does not have to be associated with an adjacent lexical item, so if *nanbiki* 'how many' bears focus, there should be no problem with it getting an association with *wa*. For completeness, *usagi nan-biki-o* can express *how many rabbits* in the object position. This is infelicitous with a negative island as the other three patterns. However, *wa* cannot rescue this pattern; With *wa*, the sentence is ungrammatical regardless of whether there is a negative island.

(Dayal 1996) — and discourse effects of contrastive *wa* enables the question to yield interpretable answers.

4.1   Special Discourse Effects of *Wa*

First, *wa* in (5) is treated as contrastive *wa* (Kuno 1973) because it is attached to a *wh*-phrase and hence cannot be a topic *wa*. The intuition shared by the analyses of contrastive *wa* (Hara 2006; Tomioka 2009; Yabushita 2017) is that this *wa* utilizes an alternative set derived by focus (Rooth 1985) in the discourse. For example, an assertion with contrastive *wa* (8) can bring about an ignorance inference. This inference can be obtained from the fact that the speaker did not use stronger alternatives such as *Taro and Jiro* or *Taro, Jiro, and Saburo*.

When *wa* is used in a polar question (9), evoking a set of alternatives brings about an inference that other questions can be asked. In other words, there is an overarching question that resolves the question under discussion in the immediate context (i.e., *Who came?*). As a result, it is possible to infer that the speaker asks (9) because they expect that the addressee can at least answer the question even though it just partly resolves the issue.

(8) [$_F$Taroo-wa] kita.
    Taro-WA   came.
    'Taro came.'
    ⤳ The speaker is not sure about
      the others.

(9) [$_F$Taroo-wa] kita?
    Taro-WA   came.
    'Did Taro come?'
    ⤳ The speaker assumes the addressee
      at least knows whether Taro came.

How does *wa* work with constituent questions such as those in (5)? It is true that *wh*-questions with *wa* are marked and rare. However, as Hirayama (2019, p. 120) notes, there does not have to be a contrasted question available in the context as claimed by Miyagawa (1987). When *wa* is used with a *wh*-phrase, in the same way as (9), it projects other questions that can be asked in the immediate discourse. For example, when the speaker utters (10), they signal that there could be other questions about the same domain, which is the domain of individuals in this case. The possible questions are given after ⤳ in (10).

(10) [$_F$Dare-wa] kita?
     Taro-WA   came.
     'Who come?'
     ⤳ The speaker might want to know who did not come
     ⤳ The speaker might want to know who the addressee is not sure but might have come...

The second possible question illustrated in (10) shows that the speaker is loosening a normal assumption of questioning acts, which is the speaker expects the addressee to be fully knowledgeable and give a maximally informative answer. In other words, the expected answer can be approximate and does not have to be exact. When *wa* is used in this way, I argue that *wa* is playing a role as a discourse effect modifier, and the question itself has special discourse effects as marked questions (Farkas and Roelofsen 2017). The special discourse effect provided by *wa* is loosening the MIP given in (4).

4.2   The Interaction of *Wa* and the MIP

Given the discourse effects of *wa*, let us combine them with degree questions. When *wa* is used in the degree *wh*-question, as it does with *who*-questions, it signals that the speaker does not expect the maximally informative answer. The overall effects of degree questions with *wa* are illustrated in (11).

(11) Discourse effects of degree questions with *wa*
     Degree questions with *wa* (Q_{DegWa}) presuppose that for every world w compatible with

common knowledge, there is an interval I_{Ans} that corresponds to the answer to Q_{DegWa} such that

(i) I_{Ans} gives rise to a possible true answer to the question in w

(ii) I_{Ans} specifies the interval $[m, n]$ such that either of its complement intervals gives rise to true answers.

(i) is the presupposition that degree questions have. The effect of *wa* is illustrated in (ii). Why do we have a complication about the complements? As stated earlier, when *wa* is used, the speaker signals that they can ask questions on the same domain, which is intervals with a degree question. What is different between the *who*-questions we saw earlier and degree questions is that the alternatives have a semantic relationship with one another. It is this semantic relation that limits possible questions that the speaker can ask in the subsequent discourse.

Let us look at a simpler example without negation. (12) is a felicitous question regardless of whether there is *wa*.

(12) Taro-wa   usagi-o   nan-biki-(wa) kattei-ru   no?
      Taro-TOP rabbit-ACC what-CL-WA   have-PRES Q

      'How many rabbits-(wa) does Taro have?'

Without *wa*, there is no special discourse effect, and the addressee is expected to give a maximally informative answer to this question. If the addressee answers by saying "five," that is interpreted as the maximally informative answer. By contrast, when the speaker uses *wa*, they signal that they do not expect the maximally informative answer and it is possible for them to ask follow-up questions if necessary. That means the answer does not have to be exact; it can be approximate. For example, if the addressee answers by saying *go-hiki-wa kattei-ru* 'He has five-wa,' the speaker can follow up by referring to alternatives in the same domain, intervals. In doing so, not all intervals are targeted because of informativeness. For instance, the interval $[4, 4]$ would not be targeted because the answer by the addressee entails its truth. Only non-trivial intervals are targeted. From the speaker's perspective, the degree question with *wa* is used to understand how they should partition the intervals to ask further questions only if necessary. To put it differently, by uttering Q_{DegWa}, the speaker signals that there is at least a threshold that the hearer can use to give an answer to the question.

5   Discussion

Let us see how the proposal accounts for the negative island obviation. Remember that an intricate context is needed to rescue negative island questions in English because otherwise, the maximally informative answer does not exist. That is, with a negation, there is normally no interval that includes all the intervals that can be a true answer. In Context 2, however, the complicated context can guarantee that the addressee can find a maximally informative answer, and the question is felicitous in the end.

In Japanese, as proposed earlier, Q_{DegWa} ask for the interval that is the upper or lower bound of the intervals that give rise to true answers. In Context 1, for instance, one possible answer is $[10, 10]$. In this context, the interval $[6, 6]$, for example, cannot be I_{Ans} since neither of its complements can be a set of possible answers because of $[5, 5]$ and $[9, 9]$. As a result, this question asks the number that exceeds the largest number of rabbits somebody has, which accords with the interpretation of Q_{DegWa} reported by Schwarz and Shimoyama (2010). The discourse effects give the same answer under Context 2. Under this context, too, $[10, 10]$ is the threshold that partitions true answers and false answers. In sum, regardless of whether there is intricate context, by using *wa* the speaker can draw some contextually sufficient answer from

the addressee. This explains why the addition of *wa* can obviate a negative island. Note that from the addressee's side, it is necessary to acknowledge that they are responding to non-default questions. This is why the answer to *wa* questions must also have *wa*. By using *wa* in the answer, the addressee indicates an answer to a non-canonical question and the existence of the alternative set evoked in the discourse.

The proposed mechanism of obviation relies on presuppositions or discourse effects of the particular particle, *wa*. This explains why adding *izyoo* and *sukunakutomo*, which roughly mean *at least* in English, to the *wh*-degree phrase cannot do the same trick in Japanese. These lexical items do not carry a special presupposition or discourse effects that weaken the default assumptions of questioning acts: There is a maximally informative answer. In other words, the question with *at least* still requires the maximally informative answer, which does not exist in Context 1.

6 Conclusion and Implication

The proposed analysis does not explain why questions without *wa* are infelicitous even under Context 2, which can ameliorate the English counterpart. I argue that this is because of pragmatic competition between unmarked questions and marked ones. Because there is a tool that can be used to weaken the MIP in Japanese, not using the tool, namely the absence of *wa*, would suggest that the hearer should be able to figure out an answer without special assumptions about the context.

Unlike Schwarz and Shimoyama's (2010) analysis, the proposed analysis on negative island obviation avoids reliance on dense scales. Further research is necessary to determine whether Japanese differs from English with respect to the scales used in computations, but obviation by *wa* is also observed in other negative island environments without degrees, as shown in (13).

(13)   Taro-wa   donna-huu-ni-*(wa) eego-o   hanasemasen ka?
       Taro-TOP which-way-in-*wa*   English-ACC cannot speak Q

       'How can Taro not speak English?'   [Hirayama (2019, p. 143)]

There is no evident interval or scale in (13), but a possible answer to (13) is '*He cannot speak like a native speaker*,' which is based on a scale of proficiency. Considering such a scale is likely to be discrete, at least in Japanese, it is not necessary to assume scales are dense to account for (in)felicity of questions with negative islands.

In this paper, I analyzed *wa*-questions as marked questions equipped with special discourse effects. Japanese is known to have a variety of biased questions (Sudo 2013; Ito and Oshima 2014). By nature, biased questions are polar questions; It is not possible to have some bias with *wh*-questions. The negative island obviation by *wa* suggests that Japanese has special *wh*-questions, in addition to biased questions. Special *wh*-questions and their pragmatic effects have been investigated in Romanian (Farkas 2022) and German (Eckardt 2020). Japanese *wa* questions are an interesting additional data point to cross-linguistic research of special questions.

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